REMARKS

This responds to the Office Action mailed on November 15, 2006.

Claims 1, 16, 31 and 33 are amended, no claims are canceled, and no claims are added; as a result, claims 1-38 are now pending in this application.

§101 Rejection of the Claims

Claim 33 was rejected under 35 U.S.C. § 101 because the claimed invention was alleged to be directed to non-statutory subject matter.

MPEP §2106 controls the determination as to what is to be considered functional and nonfunctional data for purposes of 35 USC §101. MPEP 21 06(IV)(B)(l) states that when "functional descriptive material is recorded in some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since technology permits the function of descriptive material to be realized." (Emphasis added.) The test is whether the claimed invention as a whole produces a useful and tangible result. There is no longer a technical arts test and the MPEP in §2106 specifically addresses instances where data structure claims are permissible.

Claim 33 as amended recites:

> A machine-readable medium storing a machine executable description of a circuit, said machine executable description of the circuit including:
>
> a description of an oscillator, operatively to be coupled to a non-volatile memory, to receive an oscillator calibration value from the non-volatile memory, and to generate an oscillation frequency signal within an RFID tag utilizing the oscillator calibration value;
>
> a description of a tag controller to generate a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a received radio-frequency signal from an RFID reader; and
>
> a description of a modulator to backscatter modulate a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal.

Applicants respectfully submit that the amended claim 33 is directed to a statutory article of manufacture subject matter in that it is directed to a machine readable medium storing a machine executable description of a circuit. Thus, the claimed medium stores machine readable

functional descriptive material which is interrelated to the medium and produces useful and tangible results, e.g. a machine outputs such as simulation results. Therefore, it is respectfully requested that the claim rejection under 35 U.S.C. § 101 be withdrawn.

§102 Rejection of the Claims

Claims 1, 2-14, 16, 17-29, 31, and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Beigel et al. (U.S. 6,249,212, hereinafter "Beigel").

Applicants respectfully submit that the Office Action does not make out a *prima Facie* case of anticipation for the reasons expressed below:

The reference does not teach each and every claim element.

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Claim 1 recites:

> A radio-frequency identification (RFID) tag including:
> a non-volatile memory;
> an oscillator, coupled to the non-volatile memory, to receive an oscillator calibration value from the non-volatile memory, and to generate an oscillation frequency signal within the RFID tag utilizing the oscillator calibration value;
> a tag controller to generate a command signal within the RFID tag, the command signal being based on command data received at the RFID tag in a received radio-frequency signal from an RFID reader; and
> a modulator to backscatter modulate a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal. (Emphasis Added)

The Office Action at page 6, under discussion of the second limitation of claim 1, states, "Beigel discloses that the universal tag comprises (b) a voltage-controlled oscillator (VCO) 203 that receives a frequency value (i.e., a calibration value) from the non-volatile memory . . . ." The Office Action cites several paragraphs from Beigel, including the following paragraphs:

> The clock generator includes an oscillator locked to the frequency of the voltage induced in the transducer by a reader's carrier. The clock generator includes a frequency memory which causes the frequency of the oscillator to be maintained at the frequency of the voltage induced in the transducer after the induced voltage disappears.

(Col. 4, lines 15-21) (Emphasis Added)

> The voltage-controlled oscillator includes a memory whereby the oscillator maintains its phase-locked frequency if the carrier disappears. This capability is necessary in emulating an HDX tag where the reader carrier is periodically turned on and off. The clock frequencies which are generated by the clock generator 7 are specified by data stored in memory. If frequencies different from those stored in memory are required to emulate new tags, they may be added to those stored in memory by the control reader.
> (Col. 6, lines 32-41) (Emphasis Added)

In the above texts, the frequency memory stores the oscillator frequency in order to enable the voltage-controlled oscillator to maintain its frequency after the induced voltage in the transducer disappears. In other words, the voltage-controlled oscillator can maintain its phase-locked frequency, even if the carrier disappears and there is no induced voltage in the transducer.

Claim 1 of the instant application requires "an oscillator . . . to receive an oscillator calibration value." The "oscillator frequency" stored by the frequency memory included in the clock generator in the above quotes is simply a frequency and does not even constitute the same physical quantity as the claimed *oscillation calibration value*. Thus, the oscillator frequency in Beigel is not the same as the claimed *oscillation calibration value*. In addition, in the above text, Beigel does not disclose generating *an oscillation frequency signal within the RFID tag*, utilizing such a value, as recited in claim 1.

As such, Beigel does not teach the limitation of "*an oscillator, coupled to the non-volatile memory, to receive an oscillator calibration value from the non-volatile memory, and to generate an oscillation frequency signal within the RFID tag utilizing the oscillator calibration value,*" as recited by claim 1.

Another distinction between claim 1 and Beigel lies in the last limitation of claim 1, namely, "*a modulator to backscatter modulate . . .*" With respect to this limitation, the Office Action cites a number of passages from Beigel, including:

> The modulator 11 is connected across the transducer 3 and generates the message waveforms which are transmitted to a reader in response to a reader's transmission of its carrier. (Col. 6, lines 62-65)

> . . . the tag creates a modulated carrier with a frequency the same as or different

> from the frequency of the reader's carrier. The tag's carrier produces a separate alternating magnetic field which is superimposed on the alternating magnetic field established by the reader. (Col. 1, lines 57-60)
>
> The control means appends an auxiliary message waveform to the message waveform intended for the control reader, when the control means causes the modulator to drive the transducer with one or more message waveforms after an interrogation by a reader. The auxiliary message waveform is derived from an auxiliary message constructed by the control means. A sensor circuit having an output which is an uncalibrated measure of an environmental parameter can be incorporated in the universal tag. . . . The control means constructs the auxiliary message intended for the control reader from the sensor output and the sensor circuit calibration data stored in the memory. (Col. 4, lines 48-61)

From the above texts, it is clear that the modulator generates a message waveform across the transducer that transmits the waveform to a reader. The message waveform consists of a carrier and a separate alternating [electro-] magnetic field. The control means appends an auxiliary message waveform, derived from a sensor output which is an uncalibrated measure of an environmental parameter, to the message waveform intended for the control reader.

In contrast, the modulator in claim 1 backscatter modulates according to both the oscillator frequency and a command signal, wherein the command signal is based on command data received at the RFID tag in a received radio-frequency signal from an RFID reader, whereas, in the above passage, an auxiliary message is derived from a sensor output which is an uncalibrated measure of an environmental parameter. Consequently, in the above quotes, Beigel does not teach, "*a modulator to backscatter modulate a transmitted radio-frequency signal in accordance with both the oscillation frequency signal and the command signal,*" as recited by claim 1.

In light of the above, Beigel fails to teach each and every element of claim 1. As such, Applicants submit that claim 1 and its dependent claims 2-14 are allowable and it is respectfully requested that the claims rejections under 35 U.S.C. § 102(b) be withdrawn.

The above arguments are also applicable to a consideration of claims 16 and 31. Therefore, at least for the same reasons set forth above, claims 16 and 31, and their respective direct/indirect dependent claims 17-30 and 32 are allowable and the claims rejections should be withdrawn.

§103 Rejection of the Claims

Claims 3, 15, 18 and 30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beigel et al. as applied to claims 1 and 16 above, and further in view of Beauvillier et al. (U.S. 6,104,291, hereinafter "Beauvillier").

With respect to dependent claims 3, 15, 18, and 30, Applicants respectfully submit that the claims are dependent on independent claims 1 and 16, which, as argued above, are patentable. Thus, claims 3, 15, 18, and 30 are allowable and it is respectfully requested the claim rejections under 35 U.S.C. § 103(a) be withdrawn.

Claims 33-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beigel et al. in view of Segal (U.S. 6,496,972, "Segal").

With regards to independent claim 33-38, the same arguments applied with claim 1 are applicable to a consideration of independent claim 33 and its dependent claims 34-38. Therefore, Applicants respectfully submit that claims 33-38 are allowable and it is requested the claim rejections under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney 408-278-4042 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Reservation of Rights

In the interest of clarity and brevity, Applicants may not have addressed every assertion made in the Office Action. Applicants' silence regarding any such assertion does not constitute any admission or acquiescence. Applicants reserve all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicants do not admit that any of the cited references or any other references of record is relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicants timely object to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicants reserve all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

Respectfully submitted,

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